

# Poultry Water Quality Handbook

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The Water Quality Consortium*



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Dear Peterson Grower

The protection of our environment and in particular of our region's water quality is of great importance to Peterson Farms. We, as a company, are committed to doing everything we can to insure generations to come have a clean water supply. You, our growers, have made clear your commitment to our environment.

Peterson Farms feels it is important to provide you with the most up-to-date information on water quality; information that will serve as a tool in managing your poultry operation. This book was written by the Poultry Water Quality Consortium for our industry. Using the information in this book will show your commitment and willingness to be stewards of our environment!

Please take the time to review the information in this book. Use it as a resource for making the right choices and following the right management practices in your operation. Peterson Farms will continue to provide you with the most up-to-date information available. Thank you for your time and commitment to this important issue.

Sincerely

Dan Henderson  
President of Peterson Farms

## P R E F A C E



## Preface to the Second Edition

**A**ir, land, and water — the environment — is more than the place where we live; it is the cornerstone of our quality of life. Every industry, every company, every individual has a stake in the environment.

The poultry industry recognizes the significance of its stake in the environment and the importance of conservation. Protecting the environment from the unintended consequences of production has always been a concern; the phenomenal growth and progress of the industry in recent years have made it a priority. The challenges that come with rapid advancement (e.g., new ways of livestock farming, changing patterns of rural development, water and soil quality) are often too complex to be solved easily or quickly. The challenges are environmental, economic, and social; and they demand cooperation, a free exchange of information, and access to technologies that can help us manage and use poultry by-products as resources, not as wastes requiring disposal.

In pursuit of this goal, the industry and several government agencies created a new venture: the Poultry Water Quality Consortium, to protect natural resources by promoting environmental management. An interagency/industry agreement signed in 1991 and renewed in 1996 formally established the consortium, which includes the following members:

- ▼ U.S. Poultry and Egg Association,
- ▼ Tennessee Valley Authority,
- ▼ U.S. Environmental Protection Agency, and the
- ▼ USDA Natural Resources Conservation Service.

The Poultry Water Quality Consortium is a cooperative effort to identify and adopt environmentally prudent uses of poultry by-products. The first edition of the **Poultry Water Quality Handbook** (1994) helped prove the value of teamwork and the successful outcomes that can be expected from the combined efforts of people and organizations, industry and government. No one is excluded from responsibility, not farmers, service providers, company management, or government officials.

The second edition of the handbook reflects the progress made in environmental management since the early 1990s, especially in the development of markets for manure and litter; the diffusion of composting methods; and the emergence of new technologies for mortality, air quality and nutrient management. Growers should find practical help in these pages — but perhaps also a glimpse of how large the community is that shares their goal. Indeed, with so many research projects and field trials now underway, supported by so many people on farms and in university, government, and industry organizations, the industry is in an excellent position to continue its role as an environmental leader.

The Poultry Water Quality Handbook seeks to consolidate information, ideas, and references to enhance water quality. As the adventure continues, the handbook, which the Consortium will continue to format as fact sheets (to encourage their wide distribution, use, and reuse) — will be revised and updated to include new technology and techniques that will ensure the quality of water for everyone.

**U.S. Poultry & Egg Association**

## A C K N O W L E D G M E N T S



**T**he *Poultry Water Quality Handbook* was prepared under the direction of the Poultry Water Quality Consortium members, with Richard D. Urban as Managing Editor, and the invaluable as-

sistance of Richard C. Strickland, Tennessee Valley Authority, Muscle Shoals, Alabama; Barry Kintzer, USDA Natural Resources Conservation Service, Washington, D.C.; Ira H. Linville, U.S. Environmental Protection Agency, Atlanta, Georgia; Richard D. Reynnells, Cooperative State Research, Extension, and Education Service, Washington, D.C.; and Lewis E. Carr, University of Maryland, College Park. References to source material are shown on the information sheets in the handbook.

Other major contributors who have given their time and knowledge to help organize and write this handbook are the following:

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Recognition is given to Rachel Reeder, JT&A., inc., Washington, D.C., for her invaluable assistance in writing and editing this handbook and to Lura Svestka, JT&A, inc., for the design and typesetting.

Special recognition is given to Johnnie Elizabeth Sanders for all her time and efforts in helping with the coordination activities, reviewer contacts, and all the details that had to be accomplished for this Handbook to become a reality.

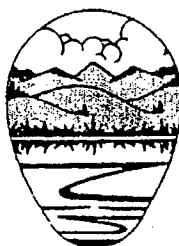
Other pages in this handbook contain more detailed information on these subjects. Permission is hereby granted to producers, growers, and associations serving the poultry industry to reproduce this material for further distribution. The Poultry Water Quality Consortium is a cooperative effort of industry and government to identify and adopt prudent uses of poultry by-products that will preserve the quality of water for everyone.

PWQH / 0 — 9/98

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# C O N T E N T S



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Preface to the Second Edition  
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# C O N T E N T S

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## WATER QUALITY ISSUES

ples of undesirable microorganisms include Salmonella, Cryptosporidium, Girardia, Listeria, coliform, New Castle (virus), ringworm, coccidiosis, and Ascaris.

When found in water or wastes, these pathogens pose significant threats to humans and other animals. They can infect humans and animals through drinking water, contact with the skin, or consumption of fish or other aquatic animals. Most pathogens die relatively quickly. However, under the right conditions, they may live long enough to cause problems. They may persist longer in groundwater than in surface water.

Producers can prevent poultry by-products or waste from contaminating water. However, environmental needs and solutions are site specific and regional in nature. In some cases, state regulations and permitting requirements may be more stringent than federal regulations. Therefore, local sources of information, including industry associations, state departments of environmental protection and public health, and USDA Natural Resources Conservation Service and Cooperative State Research, Extension, and Education Service offices should be consulted about poultry waste or by-products that affect water quality.

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